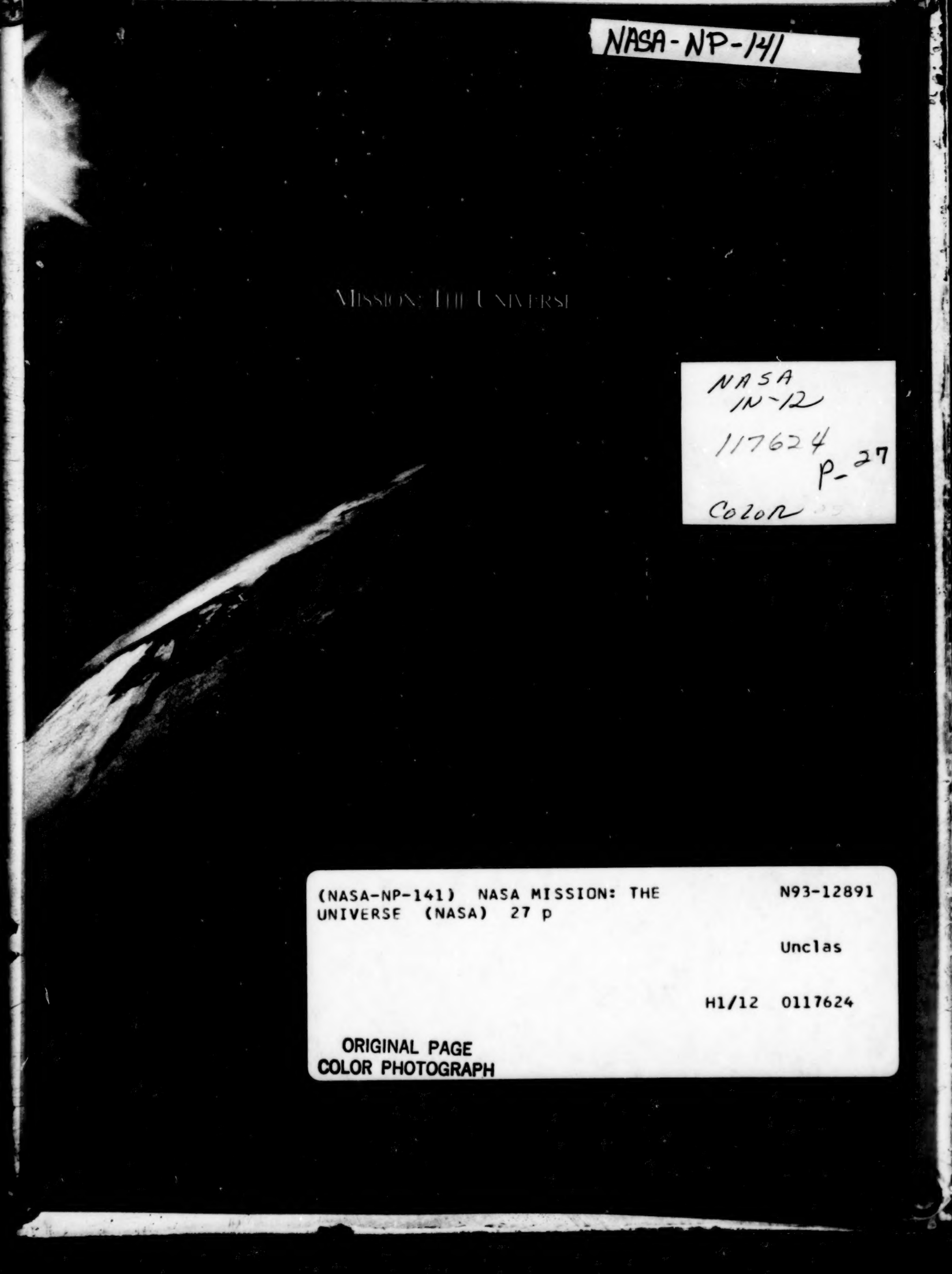


NASA

Is there life on other planets? What can we do about greenhouse warming here on Earth? Did our universe really start with a Big Bang?

People around the world discuss these questions everyday, and everyday at NASA, people work at finding the answers.

NASA, to most Americans, is the "space program" — the Right-Stuff mystique of the early rocket plane pilots, John Glenn's first orbital flight, Neil Armstrong's Moon walk, the Space Shuttle.

Manned space flight is only a part of NASA's overall mission, but it symbolizes the spirit that has characterized the agency from its founding in 1958 — the spirit of exploration and discovery.

The agency is unique in history as an enterprise devoted to broadening human knowledge across the scientific spectrum. NASA investigations range from the world of subatomic physics to the cosmic study of super novae and black holes... from charting Earth's ocean currents and winds, to testing the theory of relativity.

NASA's programs are as immediately practical as improving wind shear avoidance for aircraft and as long range as sending astronauts to other planets.

NASA scientists and engineers work at the future's threshold, on projects that often require knowledge we don't yet have, and technologies and materials still to be developed.

Programs to build an orbiting Space Station and to establish a lunar base, for

NASA's Mission to Planet Earth involves wide-ranging study of how our home planet works as a complete ecological system. This view from 1.3 million miles away was taken aboard *Galileo*.

instance, require extensive research in biochemistry and behavioral sciences that will prepare astronauts for prolonged, confined living at zero gravity, as well as new technologies, materials, and breakthroughs in solar power, robotics, computer science, and a host of other areas.

NASA is constantly recruiting exceptional personnel to provide the ingenuity to meet these challenges and to maintain the strong technological base that keeps the United States the world leader in space science and aviation.

The agency offers bright, highly motivated graduates an unmatched career opportunity — the chance to work at the cutting edge of their fields, in company with the nation's top scientists and engineers, in the most advanced facilities found anywhere.

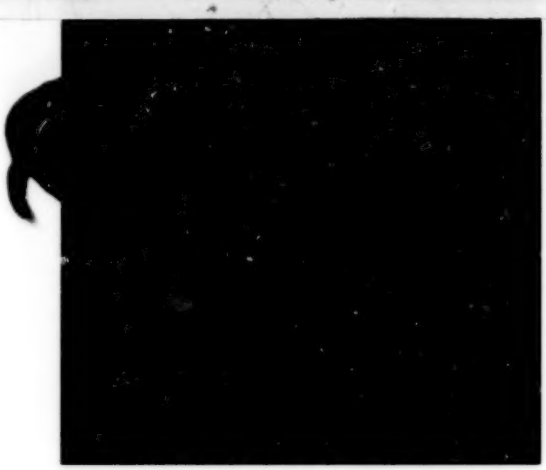
NASA's specialty fields include space sciences, earth sciences, fluid and flight mechanics, materials and structures, propulsion and power, flight systems, measurement and instrumentation systems, data systems, facilities, operations, and life sciences.

The most numerous employment opportunities at NASA are for graduates with major study in an appropriate field of engineering — aerospace, aeronautical, mechanical, electrical, electronic — or physical science, life science, computer science, mathematics, and related areas.

NASA also employs people in a wide range of administrative and technical posts that support its science and engineering activities. Both the types and numbers of job opportunities vary at each of the field installations depending upon specific needs. Detailed information on career opportunities and the application process can be obtained by writing to the NASA installation of interest to you (see page 24).

Major program directions in the '90s continue to thrust NASA toward the galaxies as well as homeward toward a comprehensive look at the biosphere of planet Earth.

The flights of the Great Observatories, the *Ulysses* probe aimed at our own Sun,



Snapshot of the Sun from Skylab 4 shows eruption of a solar flare spanning some 367,000 miles.

and other space science voyages both under way and in development portend some of the most exciting discoveries ever made about the cosmos.

NASA once again is firing the public's imagination with initiatives out of yesterday's science fiction, such as the push to establish manned bases on the Moon and Mars.

At the same time, much of NASA's work continues in the vital areas of aeronautical research and engineering. The agency's research centers contain the world's most sophisticated aerodynamics and flight control testing facilities. Its research into aircraft safety, increased fuel efficiency, and experimental designs for enhanced performance promises to maintain America's preeminence in civil and military aviation.

Spinoff technology has long been a major dividend of the space program. NASA research has led to products such as long-life power cells for flashlights, to new medical procedures, and breakthroughs in computer technology, and to important public safety applications such as a quick deicing method for aircraft as well as highway bridges. NASA researchers work closely with industry to bring countless spinoffs into our lives.

Although NASA's realm is air and space, its ultimate concern has always been that of benefiting life on Earth. And today, a top priority is the examination of such environmental threats as global greenhouse warming.

The agency's Mission to Planet Earth includes a series of Earth science missions and the launch of long-term orbiting spacecraft to find out how our planet works as a complete ecological system.

Besides looking at changing atmospheric chemistry and its impact on world climate, NASA is working to furnish the first complete picture of the interaction among the atmosphere, oceans, solid earth, and the hydrologic and carbon cycles.

How do clouds influence the radiation balance on our planet? How does polar ice affect sea levels and heat transfer? How does ocean biology govern carbon dioxide levels in the air? Can we predict volcanic eruptions and earthquakes?

And then there's the longer range goal of piloting astronauts to Mars, which

Artist's conception of future Mars landing, a challenge for the next generation of NASA scientists and engineers.

sets a clear future reference point for NASA space exploration. It also provides that spark of bold human adventure that has always characterized NASA and fueled public enthusiasm for the space program.

Having reached the Moon, our quest to walk upon the red planet is a logical next step, an inspiring challenge. But it's the journey itself that gives purpose to this pursuit and defines NASA's role — a journey that is setting in motion a vast range of scientific initiatives and challenging the creativity of the best engineers.

In similar fashion, the technological solutions for a lunar mission were far from apparent in the early days of the "space race," when President John F. Kennedy declared in 1961 that Americans would walk on the Moon before the end of that decade.

To get to the Moon, NASA first had to prove through the Mercury program that astronauts could survive in Earth orbit and return safely. Then the Gemini flights of 1965-66 deepened our knowledge of space technology, research techniques, and human factors, which paved the way for the Apollo program to the Moon.

Meanwhile, unmanned science missions — the Ranger and Surveyor programs — were needed to provide close-up pictures of the Moon and data from actual robot landings on the lunar surface.

In 1969, the final achievement of the manned Moon landing gave the nation a marvelous surge of pride. But it was the sum of the effort's by-products that established the space program as a worthy ongoing endeavor: the great leap in our scientific knowledge, the many technological advances and practical spinoffs, and a new educational thrust in science, mathematics, and engineering.

Since Apollo, NASA has been laying the foundation for today's Moon-Mars exploration program by way of scientific probes throughout the solar system and beyond, soft robot landings on Mars, microgravity experiments, and advances in rocket propulsion and other fields.

Astronauts train in the Weightless Environment Facility pool at Johnson Space Center.

The Space Shuttle's development has been a key to launching many of the scientific missions and also to giving us the capacity to build and maintain a permanently occupied orbiting Space Station. As the Shuttle program continues to evolve and provide ready access to near space, NASA is developing other advanced transportation systems to extend our reach even farther.

The journey to planet Mars will depend upon a continuing process of discovery. Men and women joining NASA today will solve the problems of extended survival in the weightlessness of space, build and launch the payloads for further study of Mars, and create self-contained environments to sustain astronauts in the hostile lunar and Martian landscapes.

Astronaut candidates experience zero gravity conditions in flight of KC-135 aircraft.

Technician at Kennedy Space Center looks for micrometeoroid impacts on sample from NASA s Long Duration Exposure Facility spacecraft.

NASA's labs, clean rooms, wind tunnels, flight simulators, tracking stations, rocket assembly plants, launch pads, and other facilities are located in eight field installations around the country.

At any given time, several installations are working on various aspects of major programs, such as Space Station *Freedom* — including design studies, human factors research, development and testing of hardware and life-support systems, launch operations, science experiments, and data processing and analysis.

Administrative offices for key program areas are located at NASA Headquarters in Washington, D.C., under the direction of NASA associate administrators.

Headquarters offices are responsible for the management of NASA's research and development program, including determination of projects and programs, establishment of management policies, evaluation of progress, and review and analysis of the aerospace program.

The Office of Inspector General (OIG), which operates independently, oversees NASA's programs in order to prevent and detect abuses. OIG personnel are located at NASA Headquarters and at each installation; these positions — primarily auditors and criminal investigators — are staffed through the OIG Headquarters personnel office.

NASA overall employs some 24,000 civil servants — most of them scientists, engineers, and technicians. In addition, thousands of contract personnel from private aerospace companies and universities also work on NASA programs.

Job applicants are hired directly by the individual field installations. Each one maintains a recruiting office that can provide details on its personnel needs and employment programs (see page 24 and inside back cover).

A description of NASA's four chief program offices follows.

Advanced technological research and development supporting all of NASA's programs is the mission of the Office of Aeronautics, Exploration, and Space Technology.

Images from the Hubble Space Telescope have caused great excitement among astronomers. The pictures have revealed the structure of a "window curtain" of gas, shown here, at the edge of the famous Great Nebula of Orion.

This office has institutional management responsibility for the Ames Research Center, Langley Research Center, and Lewis Research Center.

These installations aid U.S. civil and military aviation through state-of-the-art research and testing of materials, propulsion methods, and aerodynamic innovations for improved efficiency. NASA also is spearheading aircraft safety advances such as enhanced cockpit warning of weather and collision hazards.

The space research and technology programs are broadly focused across the scientific disciplines, reflecting NASA's dual emphasis on analyzing Earth's ecological system and conducting further space exploration.

NASA's space flight programs have captured the public's imagination since the days of Apollo, and tomorrow's goals are no less intriguing: establishment of permanent manned bases — first in Earth orbit, then on to the Moon and Mars.

NASA's Office of Space Flight (OSF) operates the Space Shuttle and provides the launch and mission control facilities that give America access to space. Scientists and engineers at the space flight field installations are creating new propulsion systems and spacecraft, learning more about human factors in space, and developing the capability for manned exploration of the solar system.

OSF has institutional management responsibility for the Johnson Space Center, Kennedy Space Center, Marshall Space Flight Center, and Stennis Space Center.

The Office of Space Operations is responsible for NASA's overall communications and data systems, including management of the complex ground- and space-based tracking network.

This office supports planetary spacecraft, Earth-orbiting satellites, Shuttle missions, sounding rockets and balloons, and aeronautical test vehicles.

Besides providing mission control and communications, data collection and data processing for flight missions, the office also furnishes administrative communications such as teleconferencing and computer-to-computer data-sharing for NASA field installations and Headquarters.

Artist's rendering of the Gamma Ray Observatory, which was launched in 1991.

[redacted] This decade has been often and aptly called a golden age for space science. From explorations of the Hubble Space Telescope, to probes of the solar system and deep space, to intensive studies of planet Earth, a wide range of science programs is directed by the Office of Space Science and Applications.

Besides having institutional management responsibility for NASA's Goddard Space Flight Center, the office also oversees the Jet Propulsion Laboratory (JPL), which is operated under contract with the California Institute of Technology in Pasadena. JPL personnel are employed by the university.

NASA Field Installations

[redacted] Ames Research Center operates at two locations — Ames Moffett in "Silicon Valley" just south of San Francisco at Moffett Field, and Ames Dryden Flight Research Facility at Edwards Air Force Base in southern California.

Ames conducts a diverse program of basic and applied research in experimental and computational aerodynamics, flight research, computer systems analysis, aeronautical and space human factors, space sciences, life sciences, infrared astronomy, and Earth system science. Ames is a principal center for computational fluid dynamics, rotocraft and powered-lift technology, artificial intelligence, and high-performance flight research. Other speciality areas include air traffic control and advanced flight simulation.

Among its advanced facilities are the Numerical Aerodynamic Simulator, which is a national pathfinder laboratory in supercomputing and related technologies, and the world's largest wind tunnel.

The Dryden facility in the Mohave Desert has been a famous testing ground for experimental high-performance aircraft since the 1940s — and it continues to pioneer in this field. It also serves as the prime landing site for the Space Shuttle.

[redacted] Goddard's mission focuses on space and Earth sciences, project management, space-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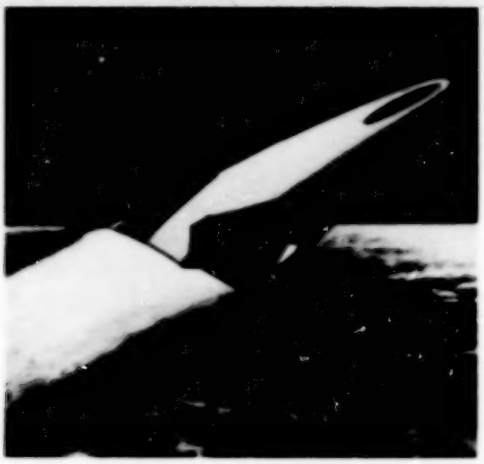


The X-30 Aero-Space Plane, now in development by NASA and the Department of Defense, will take off horizontally, accelerate into Earth orbit, and return for a runway landing.

craft tracking and communications, and applied engineering technologies. Activities extend from the identification of scientific objectives to project development, launch, spacecraft operations, data acquisition, distribution, and analysis.

Among its major projects are the Earth Observing System, Hubble Space Telescope operations, Gamma Ray Observatory, the Upper Atmosphere Research Satellite, and NASA's sounding rocket program.

Goddard is made up of a major facility at Greenbelt, Maryland, and the Wallops Flight Facility at Wallops Island, Virginia.

The Johnson Space Center near Houston, Texas, is famous as "Mission Control" — the command center for all of NASA's manned space flights since *Gemini 4* in 1965. Johnson plays a key role in the Space Shuttle program, as well as in the development of Space Station *Freedom*, which will be launched and maintained by the Shuttle. This installation also selects and trains NASA astronauts, conducts life science research, and designs and tests vehicles for manned flight.

Johnson is responsible for the White Sands Test Facility at Las Cruces, New Mexico, where testing is done on Space Shuttle and Space Station *Freedom* power and propulsion systems, materials, components, and subsystems.

America's spaceport, the Kennedy Space Center adjacent to Cape Canaveral, Florida, is NASA's primary launch facility and has been the lift-off site for every manned flight since Alan Shepard's historic 1961 journey in the *Freedom 7* capsule.

The installation handles the launch, recovery, and refurbishment of the Space Shuttle and is involved in the test, checkout, and processing of the various payloads that are launched aboard the orbiters. Other Kennedy activities include the design and development of launch facilities, processes, and support equipment, and implementation of safety, reliability, and quality assurance functions.

Langley Research Center in Hampton, Virginia, focuses primarily on aeronautics and space technology.

A close-up view of Space Shuttle main engine during a static test.

Over 40 wind tunnels, computer modeling capabilities, and other state-of-the-art testing facilities give Langley researchers the capability to investigate the full range of flight, from low-speed general aviation craft to hypersonic vehicles.

Langley also specializes in studies for large space structures and systems, performs extensive research in atmospheric science, and is involved in design of Space Station *Freedom*.

Near Cleveland, Ohio, Lewis is NASA's lead center for research and development in aircraft propulsion, space propulsion, space power, and satellite communication.

The installation's involvement in the Space Station *Freedom* program includes developing the largest space power system ever designed to accommodate life support systems and research experiments in permanent orbit.

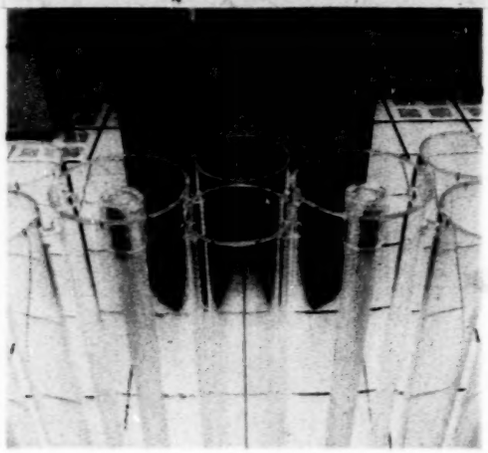
Among Lewis' unique facilities are a Microgravity Materials Science Laboratory to qualify experiments for spaceflight and a zero-gravity drop tower that simulates weightlessness.

Long known for its leadership in developing NASA's launch vehicles, the Marshall Space Flight Center at Huntsville, Alabama, also has a broad-based scientific and engineering program serving virtually all of the agency's major projects.

Marshall provides the Space Shuttle's solid rocket boosters and the orbiter's engines and external fuel tank, and has lead responsibility for the Shuttle's Spacelab missions. The installation also has a major engineering role in the Space Station program and is developing a variety of new space vehicles and science projects.

The Stennis Space Center, located on Mississippi's Gulf Coast, is NASA's chief testing center for large rocket engines. All main engines used to power the Space Shuttle are approved for flight at Stennis before an actual mission.

The installation also conducts research programs in life and environmental sciences and land and oceanographic remote sensing, and is a leader in the study of the commercialization of space technology.



Cray-2 supercomputer, part of the Numerical Aerodynamic Simulator at Ames Research Center, performs a quarter billion computations per second.

The world's leader in space and aeronautics is always seeking outstanding scientists and engineers to carry forward the great discovery process that its mission demands. Creativity. Ambition. A sense of daring. And a probing mind. That's what it takes to join the NASA team.

In turn, NASA offers truly outstanding career opportunities — a dynamic world where each day promises new professional challenges and rewards.

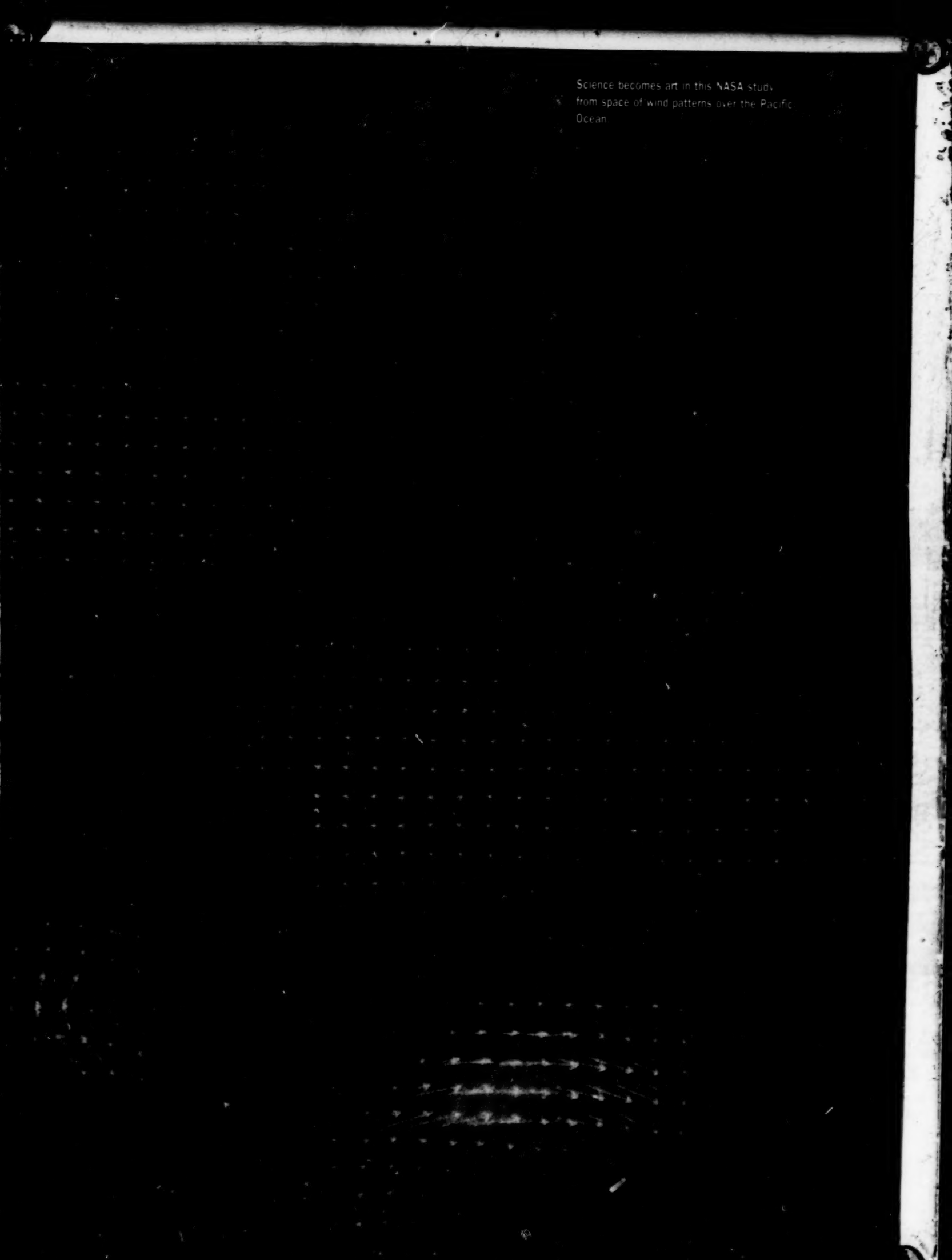
[redacted] There's no faster track in the realm of high technology than the one you'll find at NASA. The facilities, the work, and the people set the standard for the term "state of the art." And at NASA you'll quickly be making hands-on contributions to important projects. You'll be working with some of America's foremost engineers and scientists.

You'll be part of the world's most ambitious effort to extend the limits of knowledge — about our Earth and its environment, about our planetary neighbors and distant stars, and about the creation and nature of the universe itself.

[redacted] NASA offers unparalleled opportunities for professional development in the engineering and science fields. The pace of the agency's programs and research needs puts newly hired employees rapidly into the on-the-job application of concepts and skills recently learned in the classroom. Under the accelerated training program, [redacted] new hires are assigned to an experienced expert in their field for special, intense guidance. Successful candidates may be promoted after only six months of employment.

NASA encourages employees to continue learning and to work toward advanced degrees, and it offers attractive tuition reimbursement programs for graduate study. The field installations also sponsor regular educational conferences and professional symposia.

Several NASA career development programs allow mid- and senior-level



Science becomes art in this NASA study from space of wind patterns over the Pacific Ocean

Science team at work in Spacelab Mission Operations Control facility at Marshall Space Flight Center.

professionals to broaden their experience through assignments at other NASA installations and Headquarters as they pursue advancement in their specialties or in management.

Federal pay reform in 1990 increased NASA's ability to offer recruits attractive compensation packages comparable with levels in private industry. Congress provided new flexibility in setting salaries and offering related employment incentives to NASA and other Federal agencies that must recruit highly educated and specialized people.

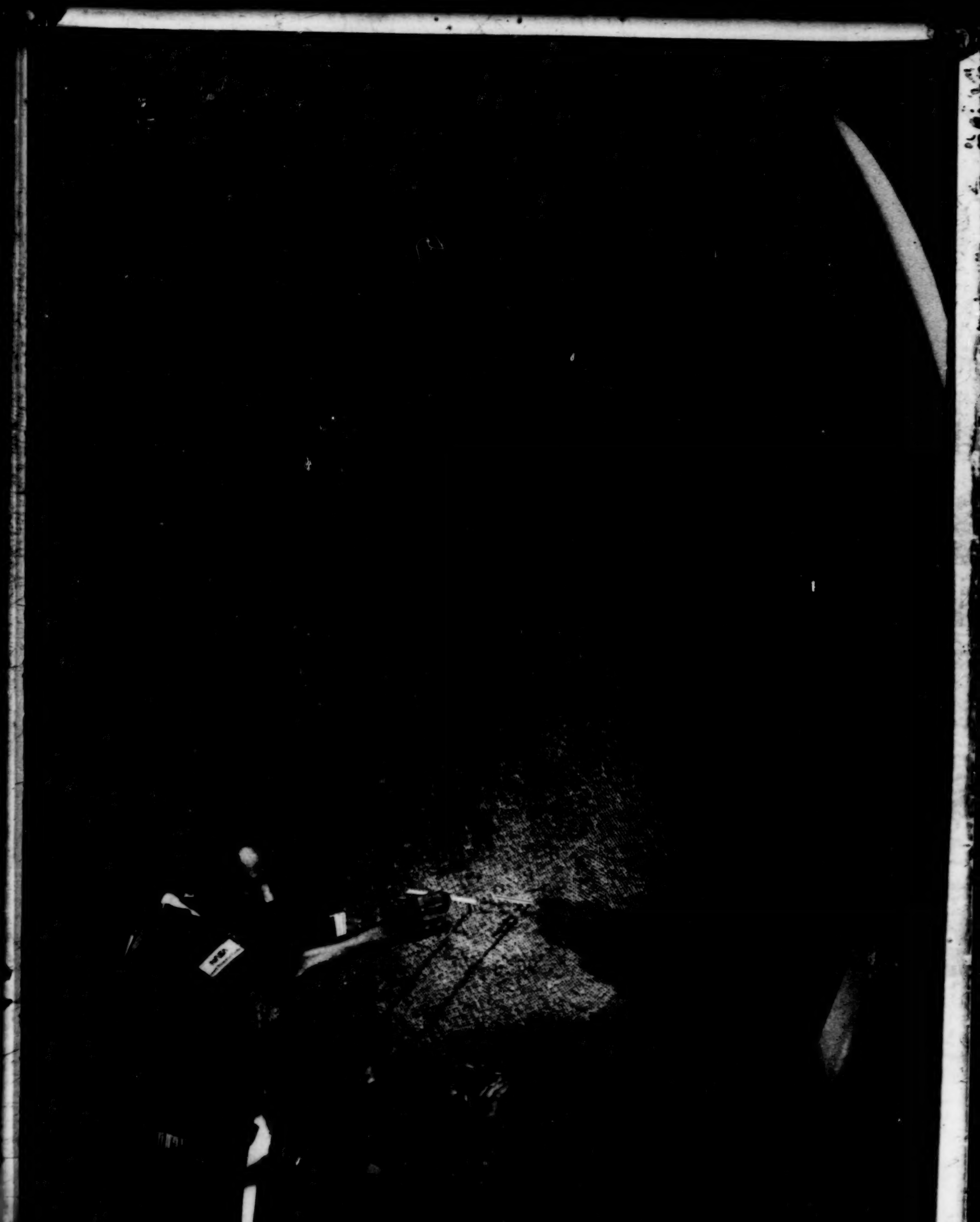
As a NASA employee, you'll receive regular salary increases, and can earn bonuses based on job performance. Employees participate in their own yearly performance appraisals and hold frequent discussions on goals, expectations, and performance with their supervisors.

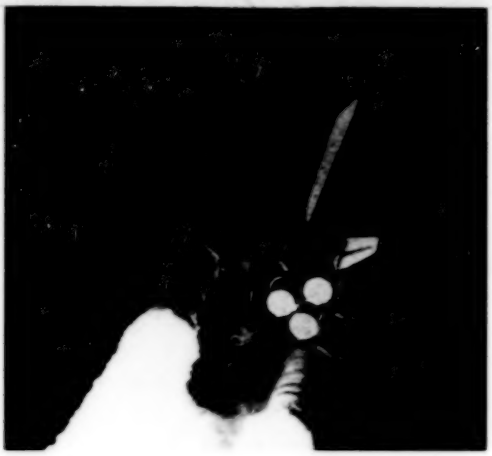
You'll be covered by the comprehensive Federal Government medical and life insurance programs and one of the best retirement plans available anywhere.

NASA is dedicated to achieving excellence in its technical missions and recognizes that its most valuable resource is its people. The agency is also equally committed to achieving its goals with a representative workforce.

To this end, NASA's policy is to provide equal employment opportunity for all persons; to prohibit discrimination in employment because of race, color, religion, sex, age, national origin, or nondisqualifying disability; and to promote the full realization of equal employment opportunity on the basis of merit and fitness through a continuing affirmative action program throughout the agency.

Ordinary soda straws, 106,000 of them, help to straighten air flow through low-speed centrifugal compressor at Lewis Research Center. Purpose of the research facility is to improve performance of helicopter engines. ►





Shuttle Atlantis lifts off in mission to deploy the Galileo spacecraft.

For more information or to apply for employment, write to the installations that interest you at the addresses below. Send a letter outlining your interests, a copy of your transcript, and a Federal employment application (ask your college placement counselor where to get one).

Please send a separate form to each installation you're considering.

Ames Research Center
Personnel Office
Attn: College Recruitment Manager
Moffett Field, CA 94035-1000
or, for Dryden facility:

Dryden Flight Research Facility
Personnel Office
Attn: College Recruitment Manager
Edwards, CA 93523-0273

Goddard Space Flight Center
Personnel Office
Attn: College Recruitment Manager
Greenbelt, MD 20771
or, for Wallops facility:

Wallops Flight Facility
Personnel Office
Attn: College Recruitment Manager
Wallops Island, VA 23337

Lyndon B. Johnson Space Center
Personnel Office
Attn: College Recruitment Manager
Houston, TX 77058

John F. Kennedy Space Center
Personnel Office
Attn: College Recruitment Manager
Kennedy Space Center, FL 32899

Langley Research Center
Personnel Office
Attn: College Recruitment Manager
Hampton, VA 23665-5225

Lewis Research Center
Personnel Office
Attn: College Recruitment Manager
21000 Brookpark Road
Cleveland, OH 44135

George C. Marshall Space Flight Center
Personnel Office
Attn: College Recruitment Manager
Huntsville, AL 35812

John C. Stennis Space Center
Personnel Office
Attn: College Recruitment Manager
Stennis Space Center, MS 39529

NASA Headquarters
Personnel Office
Attn: FPH/Recruitment
Washington, DC 20546

Office of Inspector General
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